

Data Analytics-Based Demand Profiling and Advanced Demand Side Management for Flexible Operation of Sustainable Power Networks

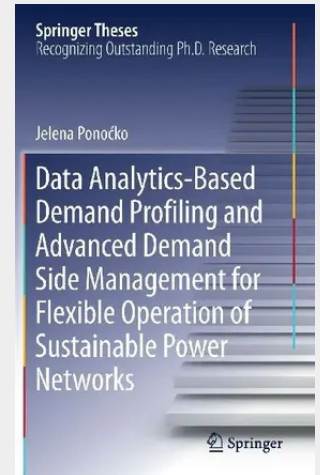
This thesis deals with two important and very timely aspects of the future power system operation - assessment of demand flexibility and advanced demand side management (DSM) facilitating flexible and secure operation of the power network. It provides a clear and comprehensive literature review in these two areas and states precisely the original contributions of the research.

The book first demonstrates the benefits of data mining for a reliable assessment of demand flexibility and its composition even with very limited observability of the end-users. It then illustrates the importance of accurate load modelling for efficient application of DSM and considers different criteria in designing DSM programme to achieve several objectives of the network performance simultaneously. Finally, it demonstrates the importance of considering realistic assumptions when planning and estimating the success of DSM programs.

The findings presented here have both scientific and practical significance; they gained her BSc and MSc degrees in electrical engineering from the University of Belgrade in 2011 and 2012 respectively. She graduated with her PhD from the University of Manchester. She has presented at several conferences, and has won runner-up prizes in poster presentation at three. She has authored or co-authored more than 40 journal, conference and technical papers, provide a basis for further research, and can be used to guide future applications in industry.

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